

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A method for increasing quality of an enhanced output signal to approximate an undistorted sound signal, the method comprising steps of:
 - receiving a distorted input signal that includes an embedded corrupting signal, wherein the embedded corrupting signal is statistically related to the undistorted sound signal;
 - defining an enhancement signal as the difference between the distorted input signal and the enhanced output signal, whereby the enhancement signal attempts to offset the embedded corrupting signal;
 - determining a power of the enhancement signal;
 - constraining possible values for the power of the enhancement signal based on characteristics of the distorted input signal; and
 - producing the enhanced output signal, based at least in part upon constrained values of the power of the enhancement signal resulting from the constraining step.

2. (Previously Presented) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 1, wherein the power of the enhancement signal is determined over a finite-support window.

3. (Cancelled)

4. (Original) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 2, further comprising a step of increasing the periodicity of the distorted input signal.

5. (Cancelled)

6.. (Original) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 1, further comprising a step of increasing the periodicity of the distorted input signal.

7. (Previously Presented) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 1, further comprising a step of feeding-back the enhanced output signal to affect determination of the enhanced output signal.

8. (Previously Presented) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 1, further comprising additional defining, determining, constraining and producing steps to iteratively refine the enhanced output signal.

9. (Original) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 1, further comprising a step of

determining an amount of forward-in-time sample-sequences to use in determining the enhanced output signal.

10. (Original) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 1, further comprising a step of determining an amount of backward-in-time sample-sequences to use in determining the enhanced output signal.

11. (Original) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 1, wherein the embedded corrupting signal is introduced as an artifact of encoding and decoding of the undistorted sound signal.

12. (Original) A computer-readable medium having computer-executable instructions for performing the computer-implementable method for increasing quality of the enhanced output signal to approximate the undistorted sound signal of claim 1.

13. (Previously Presented) A method for increasing quality of an enhanced output signal to approximate an undistorted sound signal, the method comprising steps of:
receiving a distorted input signal that includes an embedded corrupting signal, wherein the embedded corrupting signal is statistically related to the undistorted sound signal;
estimating a first iteration enhanced output signal;

defining a first iteration enhancement signal as the difference between the distorted input signal and the first iteration enhanced output signal;

determining a power of the first iteration enhancement signal;

constraining possible values for the power of the first iteration enhancement signal based on characteristics of the distorted input signal; and

producing a second iteration enhanced output signal, based at least in part upon constrained values of the power of the first iteration enhancement signal resulting from the constraining step.

14. (Previously Presented) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 13, wherein the power of the enhancement signal is determined over a finite-support window.

15. (Cancelled)

16. (Original) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 14, further comprising a step of increasing periodicity of the distorted input signal.

17. (Cancelled)

18. (Original) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 13, further comprising a step of increasing periodicity of the distorted input signal.

19. (Previously Presented) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 13, further comprising a step of determining an amount of forward-in-time sample-sequences to use in determining the enhanced output signal.

20. (Previously Presented) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 13, further comprising a step of determining an amount of backward-in-time sample-sequences to use in determining the enhanced output signal.

21. (Original) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 13, wherein the embedded corrupting signal is introduced as an artifact of encoding and decoding of the undistorted sound signal.

22. (Original) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 13, wherein the first iteration

enhancement signal and the second iteration enhancement signal correspond to a same portion of the undistorted sound signal.

23. (Original) A computer-readable medium having computer-executable instructions for performing the computer-implementable method for increasing quality of the enhanced output signal to approximate the undistorted sound signal of claim 13.

24. (Previously Presented) A sound enhancement system that improves a distorted input signal to produce an enhanced output signal where the distorted input signal includes an embedded corrupting signal, wherein the embedded corrupting signal is statistically related to an undistorted sound signal, the sound enhancement system comprising:

an enhancement circuit that receives the distorted input signal and produces a first iteration enhanced output signal, wherein the enhancement circuit:

defines the first iteration enhancement signal as the difference between the first iteration enhanced output signal and the distorted input signal;

determines a power of the first iteration enhancement signal; and

constrains possible values for the power of the first iteration enhancement signal based on characteristics of the distorted input signal;

a feedback circuit that feeds back the first iteration enhancement signal as an improved distorted input signal to effect production of a second iteration enhanced output signal by the enhancement circuit; and

an output circuit that produces the enhanced output signal upon completion of at least one iteration cycle.

25. (Previously Presented) The sound enhancement system as recited in claim 24, wherein the power of the first iteration enhancement signal is determined over a finite-support window.

26. (Cancelled)

27. (Previously Presented) The sound enhancement system as recited in claim 24, wherein the periodicity of the distorted input signal is increased by the enhancement circuit.

28. (Previously Presented) The sound enhancement system as recited in claim 24, wherein the embedded corrupting signal is introduced as an artifact of encoding and decoding of the undistorted sound signal.

29. (Cancelled)

30. (New) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 1, wherein the undistorted sound signal is an undistorted speech signal and the distorted input signal is a distorted input speech signal.

31. (New) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 1, wherein the constraining step includes constraining possible values for the power of the enhancement signal such that the power is less than or equal to a certain fraction of a power of the distorted input signal.

32. (New) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 31, wherein the undistorted sound signal is an undistorted speech signal and the distorted input signal is a distorted input speech signal.

33. (New) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 13, wherein the undistorted sound signal is an undistorted speech signal and the distorted input signal is a distorted input speech signal.

34. (New) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 13, wherein the constraining step includes constraining possible values for the power of the first iteration enhancement signal such that the power is less than or equal to a certain fraction of a power of the distorted input signal.

35. (New) The method for increasing quality of the enhanced output signal to approximate the undistorted sound signal as recited in claim 34, wherein the undistorted sound

signal is an undistorted speech signal and the distorted input signal is a distorted input speech signal.

36. (New) The sound enhancement system as recited in claim 24, wherein the undistorted sound signal is an undistorted speech signal and the distorted input signal is a distorted input speech signal.

37. (New) The sound enhancement system as recited in claim 24, wherein the enhancement circuit constrains possible values for the power of the first iteration enhancement signal such that the power is less than or equal to a certain fraction of a power of the distorted input signal.

38. (New) The sound enhancement system as recited in claim 37, wherein the undistorted sound signal is an undistorted speech signal and the distorted input signal is a distorted input speech signal.